



## MEMO

TO Erik VanderSpek, Principal Ranger, Eastern Sector  
FROM John Duggan  
DATE 4 December 2009  
FILE NUMBER PK/01/01/07  
FOR YOUR INFORMATION

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### Birchville Dam safety surveillance

#### General

Birchville Dam is a “small dam”, as it holds less than 20,000 m<sup>3</sup> of water (not a “large dam” as defined by section 7 of the *Building Act 2004*).

Regular monitoring and maintenance is required on small dams to ensure there is a low probability of failure. The following recommended dam safety surveillance of Birchville Dam is based on the NZSOLD publications *Guidelines on Inspecting Small Dams* (copy attached) and *New Zealand Dam Safety Guidelines*.

#### Inspections

Routine visual inspections are a key element for the safe operation of any dam. In general, small dams should receive a detailed inspection immediately after each significant flood and earthquake, and not less than once a year.

#### Proposed inspection regime

Period	Inspection by
After significant event and not less than annually	Greater Wellington Regional Council Park Ranger or Engineering and Projects Engineering Technician
Five years	Dam engineer (Consultant)

Generally, “small dams” do not require a comprehensive safety review or inspection by a recognised dam engineer until a potential issue is identified. However, an inspection every five years by a recognised dam engineer is recommended for Birchville Dam because:

- The dam is over 70 years old
- The dam is a large structure, with a height of approximately 15 m
- It holds nearly 20,000 m<sup>3</sup> of water

- Failure of the dam would have a significant environmental impact

Attached is a proposed inspection checklist that should be used to record the regular inspections of the dam.

An engineering technician in the Engineering and Projects Team is available to carry out the annual inspections if required.

Previous reports indicate that the dam sluice valve is regularly exercised to ensure continued operation of this valve. I recommend that valve exercising continues and that it be incorporated with the annual dam inspection.

### **Previous safety review**

The Birchville Dam was last inspected by a dam engineer on 26 May 2006. The result of this inspection by Damwatch Services Ltd is presented in their report held on file PK/01/01/07 (Powerdocs #358141).

### **Proposed new file**

Current correspondence on the Birchville Dam is held on file PK/10/01/07 and PK/08/01/10. To allow easy identification and retrieval of all documents related to the Birchville Dam, I recommend that a new file be opened - PK/08/01/14 - with the title *Birchville Dam*. Relevant documents in existing files should be transferred to this new file.

### **John Duggan**

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